

Listing of Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Canceled)
2. (Canceled)
3. (Canceled)
4. (Currently amended) In a video signal processing system, a method of

computing a motion decision value, which comprises the following steps:

inputting a video signal with an interlaced video sequence of fields;

computing a frame difference signal from a difference between a previous field and a next field in the video sequence;

forming a point-wise motion detection signal from the frame difference signal;

computing a region-wise motion detection signal from the point-wise motion detection signal and an adjacent point-wise motion detection signal delayed by one field; and

forming from the region-wise motion detection signal a motion decision value and outputting the motion decision value for further processing in the video signal processing system;

~~The method according to claim 1,~~ wherein the step of forming the point-wise motion detection signal comprises computing

$$f_n(i, h) = T_K(d_n(i, h))$$

where f_n is the point-wise motion detection signal, i and h define a spatial location of the respective video signal value in a cartesian matrix, $T_K(\cdot)$ denotes a threshold function represented as

$$T_K(y) = \begin{cases} 1, & \text{if } y \geq K \\ 0, & \text{otherwise} \end{cases}$$

in which K is a positive constant, and $d_n(\cdot)$ is the low-pass filtered frame difference signal.

5. (Currently amended) In a video signal processing system, a method of computing a motion decision value, which comprises the following steps:
- inputting a video signal with an interlaced video sequence of fields;
 - computing a frame difference signal from a difference between a previous field and a next field in the video sequence;
 - forming a point-wise motion detection signal from the frame difference signal;
 - computing a region-wise motion detection signal from the point-wise motion detection signal and an adjacent point-wise motion detection signal

delayed by one field; and

forming from the region-wise motion detection signal a motion decision value and outputting the motion decision value for further processing in the video signal processing system;

~~The method according to claim 1,~~ wherein the region wise motion detection signal is computed from the point-wise motion detection signal by logically combining the point-wise motion detection signal f_n as

$$\phi_n(i, h) = f_n(i, h) \parallel f_{n-1}(i-1, h) \parallel f_{n-1}(i+1, h)$$

where $f_{n-1}()$ denotes the motion detection signal delayed by one field, the indices i and h define a spatial location of the respective video signal value in a cartesian matrix, and the notation \parallel denotes a logical OR operation.

6. (Canceled)

7. (Canceled)

8. (Canceled)

9. (Canceled)

10. (Canceled)

11. (Canceled)

12. (Canceled)

13. (Canceled)

14. (Canceled)

15. (Currently amended) In a video signal processing system, an apparatus for computing a motion decision value, comprising:

an input for receiving a video signal with an interlaced video sequence;

difference forming means connected to said input for computing a frame difference signal from a difference between a previous field and a next field of a current field to be deinterlaced;

means for forming a point-wise motion detection signal from the frame difference signal, and for computing a region-wise motion detection signal from the point-wise motion detection signal and an adjacent point-wise motion detection signal delayed by one field;

means for forming from the region-wise motion detection signal a motion decision value and for outputting the motion decision value for further processing in the video signal processing system; and ~~The apparatus according to claim 12, which comprises~~

a logic member programmed to compute the motion decision value from the point-wise motion detection signal by logically combining the point-wise motion detection signal f_n as

$$\phi_n(i, h) = f_n(i, h) \parallel f_{n-1}(i-1, h) \parallel f_{n-1}(i+1, h)$$

where $f_{n-1}()$ denotes the motion detection signal delayed by one field, the indices

i and h define a spatial location of the respective video signal value in a cartesian matrix, and the notation \parallel denotes a logical OR operation.

16. (Canceled)

17. (Canceled)

18. (Canceled)

19. (Canceled)